AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A video quality assessment method, comprising the steps of:

matching sub-field/frame elements of a test video field/frame with corresponding sub-field/frame elements of at least one reference video field/frame; and

generating a video quality value in dependence on the matched sub-field/frame elements of the test and reference video fields/frames.

2. (original) A method according to claim 1, wherein the matching step further comprises, for a sub-field/frame element of the test video field/frame, searching for a matching sub-field/frame element within M1 preceding and/or M2 succeeding reference video fields/frames to a temporally corresponding reference video field/frame to the test video field/frame.

3. (original) A method according to claim 2, wherein M1 and M2 are predefined.

4. (currently amended) A method according to ~~claims 2 or 3~~ claim 2, wherein the searching step further comprises searching within a spatially bounded region of the reference video fields/frames about the corresponding position within the reference fields/frames as the test sub-field/frame element takes within the test video field/frame.

5. (original) A method according to claim 4, wherein the spatial extent of the search region is predefined.

6. (currently amended) A method according to ~~any of the preceding claims~~ claim 1, wherein the matching step further comprises, for a sub-field/frame element of the test video field/frame:

defining a matching template comprising a portion of the test video field/frame including the sub-field/frame element; and

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using the defined matching template to search for matching sub-field/frame elements in the at least one reference video field/frame.

7. (currently amended) A method according to ~~any of the preceding claims~~ claim 1, wherein the matching step further comprises calculating one or more matching statistic values and/or matching vectors; and wherein the generating step generates the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors.

8. (original) A method according to claim 7, wherein the calculating step comprises:

constructing one or more histograms relating to the searched area (s) of the reference video field (s) /frame (s); and

calculating a matching statistic value for each histogram relating to the proportion of matched elements which contribute to the peak of the histogram.

9. (currently amended) A method according to ~~any of the preceding claims~~ claim 1, wherein the generating step further comprises:

calculating a plurality of video characteristic values respectively relating to characteristics of the test and/or reference video fields/frames in dependence on the matched sub-field/frame elements of the test and reference video fields/frames; and

integrating at least the calculated video characteristic values together to give the video quality value.

10. (currently amended) A method according to claim 9 ~~when dependent on claims 7 or 8~~, wherein the matching step further comprises calculating one or more matching statistic values and/or matching vectors; and wherein the generating step generates the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors; and wherein the integrating step further includes integrating the matching statistic value (s) with the calculated video characteristic values to give the video quality value.

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11. (currently amended) A method according to ~~claims 9 or 10~~ claim 9, wherein the video characteristic values are respectively any two or more of the following values: one or more spatial frequency values; one or more texture values; at least one edge value ; at least one luminance signal to noise ratio value ; and/or one or more chrominance signal to noise ratio values.

12. (original) A method according to claim 11, wherein the calculation of the edge value comprises, for a test field/frame:

counting a number of edges in each sub-field/frame element of the test field/frame;

counting a number of edges in each sub-field/frame element of the at least one reference field/frame matched to the sub-field/frame elements of the test field/frame; and

determining an edge value for the test field/frame in dependence on the respective counts.

13. (original) A method according to claim 12, wherein the determining step further comprises:

calculating difference values between each pair of respective counts;

putting each calculated difference value to the power Q;

summing the resulting values to give a sum value ; and putting the sum value to the power 1/Q to give the edge value.

14. (currently amended) A method according to ~~any of claims 9 to 13~~ claim 9, wherein the integrating step further comprises weighting each value by a predetermined weighting factor; and summing the weighted values to give the video quality value.

15. (original) A method according to claim 14, wherein the summing step is further arranged to sum the weighted values with a predetermined offset value.

16. (currently amended) A method according to ~~any of claims 14 or 15~~ <u>claim 14</u>, wherein the weighting factors and the offset value are dependent on the type of the test and reference video fields/frames.

17. (currently amended) A computer program or suite of programs so arranged such that when executed by a computer system it/they cause/s the system to perform the method of ~~any of claims 1 to 16~~ <u>claim 1</u>.

18. (original) A modulated carrier signal incorporating data corresponding to the computer program or at least one of the suite of programs of claim 17.

19. (original) A computer readable storage medium storing the computer program or at least one of the suite of computer programs of claim 17.

20. (original) A system for video quality assessment, comprising:

matching means for matching sub-field/frame elements of a test video field/frame with corresponding sub-field/frame elements of at least one reference video field/frame; and

video processing means arranged in use to generate a video quality value in dependence on the matched sub-field/frame elements of the test and reference video fields/frames.

21. (original) A system according to claim 20, wherein the matching means further comprises, temporal searching means arranged in use to search for a matching sub-field/frame element within M1 preceding and/or M2 succeeding reference video fields/frames to a temporally corresponding reference video field/frame to the test video field/frame.

22. (original) A system according to claim 21, wherein M1 and M2 are predefined.

23. (currently amended) A system according to claims 21 ~~or 22~~, and further comprising spatial searching means arranged in use to search within a spatially bounded region of the reference video fields/frames about the corresponding position

within the reference fields/frames as the test sub-field/frame element takes within the test video field/frame.

24. (original) A system according to claim 23, wherein the spatial extent of the search region is predefined.

25. (currently amended) A system according to ~~any of claims 20 to 24~~ claim 20, wherein the matching means further comprises:

means for defining a matching template comprising a portion of the test video field/frame including the sub-field/frame element; and

means for using the defined matching template to search for matching sub-field/frame elements in the at least one reference video field/frame.

26. (currently amended) A system according to ~~any of claims 20 to 25~~ claim 20, wherein the matching means further comprises calculating means arranged in use to calculate one or more matching statistic values and/or matching vectors; and wherein the video processing means is further arranged in use to generate the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors.

27. (original) A system according to claim 26, wherein the calculating means further comprises:

histogram constructing means arranged in use to construct one or more histograms relating to the searched area (s) of the reference video field(s)/frame(s); and

matching statistic calculating means for calculating a matching statistic value for each histogram relating to the proportion of matched elements which contribute to the peak of the histogram.

28. (currently amended) A system according to ~~any of claims 20 to 27~~ claim 20, wherein the video processing means further comprises:

a plurality of analysis means respectively arranged in use to calculate a plurality of video characteristic values respectively relating to characteristics of the test and/or

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reference video fields/frames in dependence on the matched sub-field/frame elements of the test and reference video fields/frames; and

an integration means for integrating at least the calculated video characteristic values together to give the video quality value.

29. (currently amended) A system according to claim 28 ~~when dependent on claims 26 or 27~~, wherein the matching means further comprises calculating means arranged in use to calculate one or more matching statistic values and/or matching vectors; and wherein the video processing means is further arranged in use to generate the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors; and wherein the integration means is further arranged to integrate the matching statistic value (s) with the calculated video characteristic values to give the video quality value.

30. (currently amended) A system according to ~~claims 28 or 29~~ claim 28, wherein the video characteristic values are respectively any two or more of the following values: one or more spatial frequency values; one or more texture values ; at least one edge value ; at least one luminance signal to noise ratio value ; and/or one or more chrominance signal to noise ratio values.

31. (original) A system according to claim 30, and further comprising edge calculation means comprising:

means for counting a number of edges in each sub-field/frame element of the test field/frame;

means for counting a number of edges in each sub-field/frame element of the at least one reference field/frame matched to the sub-field/frame elements of the test field/frame; and

means for determining an edge value for the test field/frame in dependence on the respective counts.

32. (original) A system according to claim 31, wherein the means for determining further comprises an arithmetic calculator means arranged in use to:

calculate difference values between each pair of respective counts;

put each calculated difference value to the power Q;

sum the resulting values to give a sum value; and

put the sum value to the power 1/Q to give the edge value.

33. (currently amended) A system according to ~~any of claims 28 to 32~~ claim 28, wherein the integrating means further comprises weighting means for weighting each value by a predetermined weighting factor; and summing means for summing the weighted values to give the video quality value.

34. (original) A system according to claim 33, wherein the summing means is further arranged to sum the weighted values with a predetermined offset value.

35. (currently amended) A system according to ~~any of claims 33 or 34~~ claim 33, wherein the weighting factors and the offset value are dependent on the type of the test and reference video fields/frames.

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